

S2110 SAT-STA-20131203-00142 IB2013002756
Iridium Constellation LLC
Iridium



File # SAT-STA-20131203-00142

Call Sign S2110 Grant Date 12/12/13

(or other identifier)

Term Dates period of

From 12/08/13 To: 60 days

Approved by OMB
3060-0678

Approved: *Stephen J. Duall*

Stephen J. Duall
Chief, Satellite Policy Branch

Date & Time Filed: Dec 3 2013 11:32:08:296AM
File Number: SAT-STA-20131203-00142
Callsign:

* without prejudice to

IBFS File No. SAT-MOD-20121207-00211.

FEDERAL COMMUNICATIONS COMMISSION
APPLICATION FOR SPACE STATION SPECIAL TEMPORARY AUTHORITY

FOR OFFICIAL USE ONLY

APPLICANT INFORMATION

Enter a description of this application to identify it on the main menu:

Iridium 10th STA co-location

I. Applicant

Name:	Iridium Constellation LLC	Phone Number:	703-287-7400
DBA Name:		Fax Number:	703-287-7450
Street:	1750 Tysons Boulevard	E-Mail:	donna.bethea-murphy@iridium.com
	Suite 1400		
City:	McLean	State:	VA
Country:	USA	Zipcode:	22102 -
Attention:	Donna Bethea-Murphy		

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

_____)	
)	
Iridium Constellation LLC)	Call Sign: S2110
)	
For Special Temporary Authority)	File No. SAT-STA-2013_____
_____)	

APPLICATION FOR SPECIAL TEMPORARY AUTHORITY

On November 13, 2012, the International Bureau granted Iridium Constellation LLC (“Iridium”) special temporary authority (“STA”) for 30 days—until December 12, 2012—to modify its authorization for its “Big LEO” band non-geostationary satellite orbit (“NGSO”) constellation (call sign S2110).¹ Specifically, the Bureau granted Iridium STA to keep spare satellite SV023 at its former mission altitude and move it to a parking orbit approximately 300 kilometers behind the center of plane 2, slot 2 rather than the spare satellite orbit.² The International Bureau has since granted Iridium STA for six additional 60-day periods, the most recent through December 7, 2013.³ Iridium hereby requests STA for an additional sixty (60 days)—from December 8, 2013 through February 5, 2014—to continue to keep spare satellite

¹ See *Motorola Satellite Communications, Inc. for Authority to Construct, Launch, and Operate a Low Earth Satellite System in the 1616-1626.5 MHz Band*, 10 FCC Rcd 2268 (1995) (“*Motorola Order*”).

² See Iridium Constellation LLC, Application for Special Temporary Authority, File No. SAT-STA-20121108-00195 (filed Nov. 8, 2012). On November 13, 2012, Iridium brought in-orbit spare satellite SV094 into operation in its mission constellation and replaced SV023 in plane 2, slot 2. See Letter from Donna Bethea Murphy, Iridium Constellation LLC, to Marlene H. Dortch, Federal Communications Commission (filed Nov. 14, 2012); 47 C.F.R. § 25.143(d).

³ See Iridium Constellation LLC, Application for Special Temporary Authority, File No. SAT-STA-20130131-00012 (filed Jan. 31, 2013); File No. SAT-STA-20130401-00055 (filed Apr. 1, 2013); File No. SAT-STA-20130522-00072 (filed May 22, 2013); See Iridium Constellation LLC, Application for Special Temporary Authority, File No. SAT-STA-20130730-00099 (filed July 30, 2013); See Iridium Constellation LLC, Application for Special Temporary Authority, File No. SAT-STA-20130927-00119 (filed Sept. 27, 2013)

SV023 positioned in a parking orbit approximately 300 kilometers behind the center of plane 2, slot 2.⁴ Such positioning will serve the public interest by reducing the amount of fuel that SV023 expends and extending the satellite's operational life.

I. BACKGROUND AND REQUEST FOR SPECIAL TEMPORARY AUTHORITY

On January 1, 1995, the FCC authorized Iridium's predecessor in interest to launch and operate an NGSO mission constellation of 66 satellites in the Big LEO band along with 12 in-orbit spares "in accordance with the technical specifications set forth in its applications"⁵ The application of Iridium's predecessor in interest specified that spare satellites would "be placed in a nominal 645 km orbit."⁶

On November 13, 2012, Iridium brought spare satellite SV094 into operation in plane 2, slot 2 to replace satellite SV023, which then suspended mission operations in order to be maintained as a spare. On November 14, 2012, Iridium, pursuant to a grant of special temporary authority, began to drift spare satellite SV023 to a parking orbit at its current mission altitude

⁴ On November 14, 2012, Iridium began to drift SV023 to the parking orbit. SV023 reached the parking orbit on December 13, 2012.

⁵ See *Motorola Order*, ¶ 25. On July 19, 2012, Iridium increased its total number of space stations and commenced operating a pair of co-located satellites in plane 4, slot 7 of its NGSO mission constellation pursuant to a grant of STA. See File No. SAT-STA-20120716-00116 (filed July 16, 2012); File No. SAT-STA-20120813-00129 (filed Aug. 13, 2012); File No. SAT-STA-20120927-00157 (filed Sept. 27, 2012). Iridium also filed a modification application seeking regular authority to periodically co-locate and operate additional satellites in its mission constellation, which remains pending. See *Iridium Constellation LLC, Application for Modification of Authorization*, File No. SAT-MOD-20120813-00128 (filed Aug. 13, 2012) ("Iridium Co-location Modification"). As described herein, satellite SV023 will not be co-located with satellite SV094.

⁶ See *Motorola Satellite Communications, Inc., Minor Amendment to Application of Motorola Satellite Communications, Inc. for Authority to Construct, Launch and Operate a Low Earth Orbit Satellite System in the 1616-1626.5 MHz Band*, File No. SAT-AMD-19941115-00069, at Table R-1 (Rev 1) – (Page 1 of 3) n.1 (filed Nov. 15, 1994) ("Motorola 1994 Amendment").

rather than moving it to the spare satellite orbit.⁷ SV023 reached the parking orbit on December 13, 2012. This application seeks STA to continue to position spare satellite SV023 approximately 300 kilometers behind operational satellite SV094 in a parking orbit at approximately 778 kilometers, its former mission altitude, instead of the nominal 645-kilometer orbit. SV023 will not be co-located with SV094 and will not operate as part of Iridium's mission constellation.⁸ The technical information provided in Iridium's modification application and previously provided to the Commission is incorporated by reference herein.⁹

II. PUBLIC INTEREST STATEMENT

Grant of this STA request will serve the public interest. By positioning SV023 in a parking orbit at its mission altitude rather than moving the satellite to the nominal 645 km orbit, Iridium will greatly minimize the amount of fuel that SV023 expends. Relying primarily on atmospheric drag to move the satellite 300 km over the course of approximately one month, very little fuel was expended to position SV023 in a parking orbit. By contrast, Iridium would have needed to fire the satellite's thrusters to establish the momentum needed to lower the orbit of the satellite to the nominal 645 km. And, Iridium would need to use fuel again in order re-position the satellite back to mission altitude if the spare is needed as a replacement. As such, grant of this

⁷ See Iridium Constellation LLC, Application for Special Temporary Authority, File No. SAT-STA-20121108-00195 (filed Nov. 8, 2012).

⁸ Cf. File No. SAT-MOD-20120813-00128.

⁹ See Iridium Modification Application; Motorola 1994 Amendment; Motorola Satellite Communications, Inc., Application for Minor License Modifications and Technical Waivers, File No. SAT-MOD-19960322-00047 (filed Mar. 8, 1996); Iridium Constellation LLC, Application for Minor Modification of Mobile Satellite Service Authorization to Update Orbital Debris Mitigation Requirements, File No. SAT-MOD-20080701-00140 (filed Jul. 1, 2008); Iridium Co-location Modification.

STA will conserve fuel on SV023 and extend the satellite's mission life now and in the future by facilitating safe deorbiting.

In addition, grant of this STA request poses no interference risk. The proposed location of SV023 approximately 300 km behind SV094 ensures safe station-keeping of both satellites without any overlap in orbital position. Further, SV023 has suspended mission operations and will not be co-located and operated in tandem with SV094. Instead, only the satellite's TT&C frequencies will be utilized.

III. CONCLUSION

Iridium respectfully requests that the Commission expeditiously grant this STA to continue to permit Iridium to maintain spare satellite SV023 in a parking orbit for a period of sixty (60) days.

Respectfully submitted,

By: Donna Bethea-Murphy

Donna Bethea-Murphy
Vice President, Regulatory
Engineering
Iridium Satellite LLC
1750 Tysons Boulevard
Suite 1400
McLean, VA 22102

December 3, 2013

2. Contact	
Name: Jennifer D. Hindin	Phone Number: 202-719-4975
Company: Wiley Rein LLP	Fax Number: 202-719-7049
Street: 1776 K Street, NW	E-Mail: jhindin@wileyrein.com
City: Washington	State: DC
Country: USA	Zipcode: 20006 -
Attention:	Relationship: Legal Counsel
(If your application is related to an application filed with the Commission, enter either the file number or the IB Submission ID of the related application. Please enter only one.)	
3. Reference File Number or Submission ID	
4a. Is a fee submitted with this application?	
<input checked="" type="radio"/> If Yes, complete and attach FCC Form 159. If No, indicate reason for fee exemption (see 47 C.F.R. Section 1.1114). <input type="radio"/> Governmental Entity <input type="radio"/> Noncommercial educational licensee <input type="radio"/> Other (please explain):	
4b. Fee Classification CXW – Space Station (Non-Geostationary)	
5. Type Request	
<input type="radio"/> Change Station Location <input type="radio"/> Extend Expiration Date <input checked="" type="radio"/> Other	
6. Temporary Orbit Location	7. Requested Extended Expiration Date

8. Description (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

Iridium Constellation LLC requests special temporary authority for an additional sixty (60) days, from December 10, 2013 through February 7, 2014, to maintain operation of an additional, co-located satellite in its mission constellation.

9. By checking Yes, the undersigned certifies that neither applicant nor any other party to the application is subject to a denial of Federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Act of 1988, 21 U.S.C. Section 862, because of a conviction for possession or distribution of a controlled substance. See 47 CFR 1.2002(b) for the meaning of "party to the application" for these purposes. Yes No

10. Name of Person Signing
Donna Bethea Murphy

11. Title of Person Signing
Vice President, Regulatory Engineering

12. Please supply any need attachments.

Attachment 1: Narrative	Attachment 2:	Attachment 3:
-------------------------	---------------	---------------

WILLFUL FALSE STATEMENTS MADE ON THIS FORM ARE PUNISHABLE BY FINE AND / OR IMPRISONMENT (U.S. Code, Title 18, Section 1001), AND/OR REVOCATION OF ANY STATION AUTHORIZATION (U.S. Code, Title 47, Section 312(a)(1)), AND/OR FORFEITURE (U.S. Code, Title 47, Section 503).

FCC NOTICE REQUIRED BY THE PAPERWORK REDUCTION ACT

The public reporting for this collection of information is estimated to average 2 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the required data, and completing and reviewing the collection of information. If you have any comments on this burden estimate, or how we can improve the collection and reduce the burden it causes you, please write to the Federal Communications Commission, AMD-PERM, Paperwork Reduction Project (3060-0678), Washington, DC 20554. We will also accept your comments regarding the Paperwork Reduction Act aspects of this collection via the Internet if you send them to PRA@fcc.gov. PLEASE DO NOT SEND COMPLETED FORMS TO THIS ADDRESS.

Remember – You are not required to respond to a collection of information sponsored by the Federal government, and the government may not conduct or sponsor this collection, unless it displays a currently valid OMB control number or if we fail to provide you with this notice. This collection has been assigned an OMB control number of 3060-0678.

THE FOREGOING NOTICE IS REQUIRED BY THE PAPERWORK REDUCTION ACT OF 1995, PUBLIC LAW 104-13, OCTOBER 1, 1995, 44 U.S.C. SECTION 3507.